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EXAMINER

WIEHE, NATHANIEL EDWARD

ART UNIT PAPER NUMBER

3745

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,223

Applicant(s)

DUNDAS ET AL.

Examiner

Nathan Wiehe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 and 25 is/are allowed.
- 6) ☒ Claim(s) 13-18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see page 13, lines 8-10, filed 17 January 2006, with respect to claims 1-12 have been fully considered and are persuasive. The rejection of claims 1-12 has been withdrawn.

Applicant's arguments with respect to claims 13-24 have been considered but are moot in view of the new ground(s) of rejection. The additional limitation "free of any additional radial retention member" is deemed to be new matter and is further rejected by Gastebois in view of Corsmeier.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The additional limitation, "free of any additional radial retention member" in claims 13 and 20 is viewed as new matter. Applicant's original disclosure refers to the slots (23) being occupied by one retention

portion (21), a second retention portion (22) and the root portion (26) of a blade.

However, the disclosure does not address the presence or substantially support the lack of a radial wedge, as disclosed by Gastebois.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13,15,20,23 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Gastebois (4,802,824) in view of Corsmeier (5,222,865). Gastebois discloses an apparatus comprising:

a gas turbine wheel (2) with circumferentially spaced blade attachment lugs, which include a first side a second side and a top surface;

a plurality of blade platforms including a main body (9a) extending between the leading edge, trailing edge, first blade engagement side and second blade engagement side and a pair of platform retention members (17a, 16a) located on at the first blade engagement side and the second blade engagement side, respectively, wherein the platform retention members (17a, 16a) are adapted to be located on opposite sides of a disk lug to restrain radial movement of said main body; and

a plurality of blades (3) spaced circumferentially around the gas turbine wheel (2), each of the blades are located between a pair of attachment lugs and coupled to

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them, and a portion of the outer surface of each blade platform extends between an abutting pair of blades so that their outer surfaces adjoin to form a barrier.

Gastebois also discloses that the blade abutment surfaces correspond with the blade profile and are dissimilar with one another. The blade platforms taught by Gastebois are made of a ceramic material.

Gastebois further teaches the use of a radial retention member (8) to fully secure the blade (3). Corsmeier teaches the use of shaped blade root portions (88) and platform sections (90,92) to fully restrain the blades and to prevent detrimental contact between the blade root ends and the disk (Corsmeier column 3, lines 38-45 and column 5, lines 31-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Gastebois by removing the retention member and utilizing shaped blade roots and platforms as taught by Corsmeier in order to fully restrain the blades and to prevent detrimental contact of the blade with the disk.

Claims 14,16,21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gastebois in view of Corsmeier as applied to claim 13 above, and further in view of Violette (3,801,222). The modified apparatus of Gastebois discloses the invention substantially as claimed except for abutment surfaces wrapping around a portion of the blades, a second pair of retention members, an outer surface of an aerodynamic shape, and metallic materials of construction. Violette also teaches blade platforms (20) with blade abutment surfaces (28,30) that wrap around blade (12) to better compliment the face and camber sides of blade (12). Violette also teaches a second pair of retention members (34,36) located proximate to the leading edge and

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trailing edge, respectively in order to transmit centrifugal loads. Violette further teaches blade platforms (20) with an outer surface (26) of aerodynamic shape and adapted to substantially cover the disk lug, in order to improve the aerodynamic qualities of the stage. Violette teaches a blade platform made of a suitable metal, so that the blades (12) and blade platforms (20) are of a similar material, but is silent as to the method of construction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the apparatus of Gastebois by including blade abutment surfaces that wrap around the blades, a second pair of retention member, an aerodynamically shaped outer blade platform surface, and metal construction as taught by Violette in order to better compliment the face and camber sides of the blades, transmit centrifugal loads, improve the aerodynamic qualities of the stage, and have blades and blade platforms made of similar materials.

The claimed phrases "cast" and "forged" are being treated as a product by process limitation; that is, that the blade platforms can be made by casting or forging. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 U.S.C. 102/103 rejection may be made and the burden is shifted to applicant to show an unobvious difference, See MPEP 2113. Thus, even though Violette is silent as to the process used to form the blade platforms, it appears that the product of Violette would be the same or similar as the blade platforms claimed.

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Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gastebois in view of Corsmeier and Violette as applied to claim 13 above, and further in view of Pearcey (3,494,709). The modified apparatus of Gastebois discloses the invention substantially as claimed except for the use of cast single crystal microstructure construction. Pearcey teaches the use of cast single crystal microstructure parts for use in gas turbines, so that the components exhibit exceptional physical and mechanical properties including tensile strength, ductility, creep resistance, low-cycle fatigue resistance, and thermal shock resistance. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the apparatus of Gastebois by constructing the apparatus out of a cast single crystal microstructure casting as taught by Pearcey so that the invention exhibited exceptional physical and mechanical properties.

Allowable Subject Matter

Claims 1-12 and 25 are allowed.

Claim 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nathan Wiehe
Examiner
Art Unit 3745



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2/27/06